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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATT RNEY DOCKET N
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08/155,656 11/22/93 KURUMIDA

T 862.811

EXAMINER

HUNG, S

ART UNIT

PAPER NUMBER

E3M1/0221  
FITZPATRICK, CELLA, HARPER & SCINTO  
277 PARK AVE.  
NEW YORK, NY 10172

2301

DATE MAILED: 02/21/95

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 12/14/93  
11/10/94  
5/30/94 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.                 | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.                  |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/>  |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-42 are pending in the application.

Of the above, claims NONE are withdrawn from consideration.

2. ☐ Claims have been cancelled.

3. ☐ Claims are allowed.

4. ☒ Claims 1-42 are rejected.

5. ☐ Claims are objected to.

6. ☐ Claims are subject to restriction or election requirement.

7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on                     . Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on                     , has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed                     , has been ☐ approved; ☐ disapproved (see explanation).

12. ☒ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☒ been received ☐ not been received ☐ been filed in parent application, serial no.                     ; filed on                     .

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

### **Part III DETAILED ACTION**

1. This action is responsive to communications: application, filed on 11/22/93.
2. Claims 1 to 42 are pending in the case. Claims 1, 7, 13, 14, 20, 26, 27 and 35 are independent claims.

#### ***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

#### ***Drawings***

4. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

#### ***Specification***

5. Applicant is reminded of the proper language and format of an Abstract of the Disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims,

such as "means" and "said", should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," *etc.*

***Claim Rejections - 35 USC § 112***

6. Claims 1 to 26, 28 to 34, and 36 to 42 rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims that are noted above as being rejected but not specifically cited below are rejected based on their dependency on rejected independent or dependent claims.

With respect to independent claim 1:

In line 2, the use of "with regard to" is vague and indefinite. The words do not clearly provide a description of the action being taken.

In line 8, the use of "accompanies" is vague and indefinite, as it is unclear what action is really being taken.

In line 16, the use of "acquiring" is vague and indefinite, as it is unclear what action is really being taken.

With respect to dependent claim 2:

In line 20, the use of "judged to have" is vague and indefinite, as it is unclear who or what is judging on what criteria.

With respect to dependent claim 4:

In line 8, the use of "in variable length" is vague and indefinite.

In line 9, the use of "the degree" lacks an antecedent basis. The use of "the degree of said function" is vague and indefinite, as it is unclear what it is.

With respect to dependent claim 5:

In line 8, the use of "the degree" lacks an antecedent basis. The use of "the degree of said function" is vague and indefinite, as it is unclear what it is.

With respect to dependent claim 6:

In line 3, the use of "speed at the time of formation" is vague and indefinite. It is unclear what "speed" is.

With respect to independent claim 7:

In line 14, the use of "ranking of amounts of movement" is vague and indefinite.

In line 17, the use of "a movable amount" is vague and indefinite.

In line 18, the use of "a mutual positional relationship" is vague and indefinite.

In line 26, "an control-point" should be "a control-point". This typographical error is found in other claims as well.

In line 27, the use of "a pair" is vague and indefinite.

Independent claim 7 is further rejected for incorporating similar deficiencies of claim 1.

With respect to dependent claim 9:

In line 4, the use of "fineness" is vague and indefinite.

In line 2, the use of "the pattern of the outline" lacks a clear antecedent basis, and is also vague and indefinite. Applicant may have meant "the outline of the pattern".

With respect to dependent claim 12:

In line 3, the use of "for every combination ..." is vague and indefinite.

In line 7, the use of "a pair" is vague and indefinite.

With respect to dependent claim 13:

In lines 9-12, the phrase "in a case where ... after the change" is vague and indefinite. It is difficult to understand.

In line 10, the use of "a boundary" is vague and indefinite.

In line 16-20, the phrase "selecting means for selecting, ... , selects movement ..." is grammatically incorrect.

With respect to dependent claim 28:

In line 2, the use of "with regard to" is vague and indefinite. The words do not provide a clear description of the action being taken.

In line 3, the use of "types of weights" is vague and indefinite. It is confusing what is meant by the "types".

With respect to dependent claim 29:

In line 3, the use of "types of weights" is vague and indefinite. It is confusing what "types" means.

In line 9, the use of "a function of an (n-1)th degree as path of movement" is vague and indefinite.

In line 12, the use of "n types of outline data" is vague and indefinite.

With respect to dependent claim 31:

In line 2, the use of "discriminating" is vague and indefinite. It is unclear what is exactly being done.

In line 3, the use of "capable of moving in conformity" is vague and indefinite.

In line 2-5, the phrase "discriminating means for ... is capable ...in said first memory means" is vague and indefinite. It is grammatically incorrect and confusing.

With respect to dependent claim 32:

In line 6, the use of "said control-point" lacks a clear antecedent basis.

With respect to dependent claim 33:

In line 9, the phrase "registered predetermined amounts of movement" is vague and indefinite.

In line 12, the use of "these control-points" lacks a clear, antecedent basis.

In line 17-23, the use of phrase "by searching said third memory ... by said extracting means." is vague and indefinite. It is difficult to understand.

With respect to claim 34:

In line 3, the use of "different detail of classification" is vague and indefinite.

Claims 14 to 26 and 36 to 42 are for methods performed by the apparatus of claims 1 to 13 and 28 to 34, respectively, and are similarly rejected for having substantially similar language.

#### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claims 1, 2, 3, 4, 5, 14, 15, 16, 17, 18, 27 and 35 rejected under 35 U.S.C. § 102(e) as being anticipated by Cao, U.S. Pat. No. 5,280,576, 1/18/1994 (filed on 12/24/1991), 395/150.

With respect to independent claim 1, Cao discloses the claimed outline forming apparatus including: memory means for storing **position and movement** information of the control-points of a pattern at a thickness of a prescribed weight (Col 2, line 58, "...describes the shaped of the character by means of sets of control points that define line of curve segments... Each control point is specified as Cartesian (i.e.,(x,y)) coordinate." shows position information, and col 1, line 28, "drawing of line or curve segments" shows movement information. They are the content of Font Interchange Standard File used by Interpress, a document and page description language that enables Xerox printers to print(col 2, lines 37-43). Since Interpress resides in a memory of the Xerox printer, it inherently shows the storing the character attributes in memory of the apparatus.); input means for **entering** designating information for a **pattern and weight** at the generation (col 1, line 11, "a font designer desires to modify a particular font ... have a different weight" inherently shows that the designer requesting a pattern (font in this case) at a different weight enters the request.); **acquisition means for acquiring the position** of the control-points of the outline in the weight generated based upon the position and movement information (col 3, line 18, "...FIGS. 1, 2 and 6 ... adjust the weight of character 10 to form a new character 18 by adjusting control points 14 ..."); and **outline generation** means for generating an outline of a pattern



based upon the position of the acquired control-point (FIG 6 shows the outline at a new weight that was generated from the outline of FIG. 1, and therefore inherently showing the generation means).

With respect to the dependent claim 2, Cao discloses the claimed apparatus including: said memory means of claim 1 that further stores **absence/presence** information of path of movement at each control-point (FIG.8 shows both the outline of the original character "j" at the outside lines and the lightened character at the inside lines. In FIG. 8 the intersection at the bottom of the newly formed item 42 and the original part item 40 shows that there was no movement by the control-point at the bottom as the new outline was generated with different weight. Further, item 56 shows the movement from item 54 as the character of new weight was formed. Since the information of movement or no-movement had to be stored by the Xerox printer before the use, Cao inherently shows the storing of absence/presence information of path of movement at each control-point.); said acquisition means **acquiring** the movement information from the **absence/presence information**, or if **no-movement** information is designated for a control-point, acquiring the **position of the control-point of the original pattern** (In FIG.8, item 56 shows the movement information, and the bottom of item 42 shows using of the original position of item 40 as the character of new weight is formed. To use the information, they had to be acquired from the memory, and therefore, the acquisition step is inherently taught by Cao.).

With respect to dependent claim 3, Cao disclosed the claimed apparatus including: said memory means and acquisition means of claim 1 that further **obtain and use a function** representing a path of movement of each control-point (col 2, line 57, "The character masks section describes the shape of the character by means of sets of control-points that define line or curve ... represented by conic, Bezier, or B-spine curves ...").

With respect to dependent claim 4, the claim was rejected under 35 U.S.C. Section 112 for being vague and indefinite, and lacking an antecedent basis as explained above. Assuming "the degree of said function" to be a degree of the order of magnitude or of different complexity, and assuming the "variable length" to be the data length in memory, Cao discloses the claimed apparatus including: said memory means of claim 1 where the function representing the movement of control-points are stored in **variable length in dependence upon the degree of said function** (col 2, line 60, "Curve segments are represented by conic, Bezier, or B-spline curves, of cubic or higher order." shows the use of the degree function, and therefore, inherently showing the storing of them in memory before the usage and also, inherently teaching that the differences in size and complexity of the function requires the storage in variable length of the memory.).

With respect to dependent claim 5, Cao discloses the claimed apparatus including: said input means entering **quality** designation at the time of formation of a pattern outline and said acquisition means lowering the degree of the function if low quality is designated (The use of

different functions, "represented by conic, Bezier, or B-spline curves, of cubic or higher order" (col 2, line 61) and "the curve segments of character 10 are represented in the FIS file character masks file by third order Bezier curves, which require four control points per curve segment" (col 2, line 63), inherently shows the input and acquisition means as the different functions requiring different number of control-points in a given space are used depending on quality (Examiner assumes quality as the resolution quality)).

With respect to independent claim 27, Cao discloses the claimed apparatus of storing outline-data as explained with respect to the outline forming apparatus of claim 1, except for explicitly stating **first memory means** for storing the position data of the control-points of the prescribed weight and **second memory means**, for storing movement information generated by the data in the first memory means. However, they are inherently shown, since, to calculate the movement information of a pattern with a weight, the position data must be retrieved from a memory, the movement locations are calculated, and then the calculated data must be stored in different part of the memory.

Claims 14, 15, 16, 17, 18 and 35 are for methods performed by the apparatus of claims 1, 2, 3, 4, 5, 27, respectively, and are similarly rejected.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

10. Claims 6 to 13, 19 to 26, 28 to 34 and 36 to 42 rejected under 35 U.S.C. § 103 as being unpatentable over Cao, U.S. Pat. No. 5,280,576, 1/18/1994 (filed on 12/24/1991), 395/150.

With respect to dependent claim 6, Cao discloses the claimed apparatus as explained with respect to dependent claim 3 above, except for disclosing that the input means further entering **generation-speed information** for speed at the time of formation of a pattern outline, and said acquiring means **lowering degree of the function if high speed is designated**.

However, it was a common practice in the art to designate a lower quality in the high speed generation. When, for instance, a scanner is used to scan an original pattern image to be encoded, the faster the scanning rate, the less detail of resolution is retrieved, and vice versa. Therefore, it would have been obvious to a person of ordinary skill in the art at the time when the invention was made to use the lower degree of the function for the high speed

generation, since the high speed generation suffers from a loss of resolution details (verses a lower speed generation).

With respect to independent claim 7, Cao discloses the claimed apparatus as explained with respect to independent claim 1 above, except for disclosing that said memory means further storing a **first standard width** for the pattern of the prescribed weight and a **second standard width** for a pattern of maximum weight, setting means **performing ranking** of movement from the difference between the two widths, and generating means generating the movement information based on the ranking. However, the ranking of the movement of the claim was essentially a common scaling technique where the two lengths are used as the reference, and depending on the weight requested to be generated, the thickness is calculated by performing scaling using the reference. It would have been obvious to one a person of ordinary skill in the art at the time the invention was made to use the width of the original pattern and the width of the pattern of maximum weight, since it was known in the art that using two lengths to obtain a reference for scaling is a common practice.

With respect to dependent claim 8, Cao discloses the claimed apparatus as explained with respect to independent claim 7 above, except for showing that the generating means further obtains and generates the position of a control-point of a given weight using the maximum weight-based movement rank of claim 7. As explained with respect to the claim 7, the steps of generating the position is simply a interpolation method to find a position given two end

points, and thus this technique for finding a thickness of a given weight of a pattern would have been obvious to a person of ordinary skill in the art at the time the invention was made.

With respect to dependent claim 9 and 10, Cao discloses the claimed invention as explained with respect to the independent claim 7 above, except for disclosing that the outline of the pattern of a **prescribed weight stored in the memory is an outline of a pattern of maximum finess** (claim 9), or the pattern having the **maximum finess is the second standard width** (claim 10). It was a common practice for the modern printers to use a pattern (e.g., characters, symbols, etc.) with finess details (e.g., resolution) as a reference so that any enlarging or reducing can retain as much details possible. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have use a finess detailed pattern to be either of the two reference patterns (i.e., the first pattern with a prescribed weight or the second with maximum weight).

With respect to dependent claim 11, Cao discloses the claimed apparatus as explained with respect to dependent claim 10, except for disclosing that said memory means also storing the outline of the pattern of a prescribed weight to be a maximum weight. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have use the pattern with a maximum weight to be the first standard width and the second standard pattern to have a maximum finess to make sure both finess and maximum weight is included in the reference, since it was a common practice as explained with respect to claim 9 and 10.

With respect to dependent claim 12, Cao discloses the claimed apparatus as explained with respect to dependent claim 7, except for disclosing that said generation means obtains the movement information from a table storing predetermined amount of movement for every combination ranks. Since the movement data are to be stored in the memory of a printer, it inherently shows the tabular storage structure as the position of the control-points and requesting weight are to be used to index into the movement data in a memory. Also, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have calculate and store in the memory all the movement data of possible combinations, since it would save a great deal of time in actual outline generation as the time needed for calculation of the movement is eliminated.

Independent claim 13 is for a substantially similar apparatus of claims 1 and 7, and is similarly rejected.

Dependent claim 28 is for a combination of apparatus of claims 12 and 27, and is similarly rejected.

Dependent claim 29 is for a similar apparatus of claim 28, except for replacing the "plural" with the numeric designation "n". The number of calculated movement data was obviously one less (i.e., "n-1") than the position of the control-points ("n"), since one position is used as the reference. Therefore, claim 29 is similarly rejected as claim 28 above.

Dependent claim 30 is for a combination of apparatus of claims 27 and 29, and is similarly rejected.

Dependent claim 31 is for a combination of apparatus of claims 27 and 5, and is similarly rejected for having substantially same language.

Dependent claim 32 is for a combination of apparatus of claims 27 and 6, and is similarly rejected for having substantially same language.

Dependent claim 33 is for a combination of apparatus of claims 27 and 12, except for explicitly stating that third memory stores the predetermined amount of the movement data. However, it is inherently shown, since when the data are generated they must be stored in a different memory from the first and second memory to maintain a data integrity. Therefore, claim 33 is similarly rejected as claims 27 and 12 above.

With respect to the dependent claim 34, Cao discloses the claimed apparatus as explained with respect to claim 33 above, except for disclosing that third memory means stores a **plurality types of amount-of-movement tables of different detail of classification and input means for entering designating information** of a table. This was a common practice in the art, and therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have created multiple tables of different detail (e.g., resolution



quality) in the memory of, for example, a printer, since the printer could have more quickly index to the memory depending on the detail requested and retrieve the movement data.

Claims 19 to 26 and 36 to 42 are for methods performed by the apparatus in claims 6 to 13 and 28 to 34, respectively, and are similarly rejected.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5,155,805	Kaasila	10/13/1992	395/150
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Method and apparatus for moving control points displaying digital typeface on raster output devices.

5,325,479	Kaasila	6/28/1994	395/150
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Method and apparatus for moving control points displaying digital typeface on raster output devices.

5,159,668	Kaasila	10/27/1992	395/150
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Method and apparatus for manipulating outlines in improving digital typeface on raster output devices.

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5,189,730                      Kajimoto                      2/23/1993                      395/151

Apparatus for generating character pattern signals and method for generating same.

5,355,449                      Lung et al.                      10/11/1994                      395/151

Method and apparatus for outline font character generation in dot matrix devices.

5,276,790                      Lo et al.                      1/4/1994                      395/150

Fast vertical scan-conversion and filling method and apparatus for outline font character generation in dot matrix devices.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Hong whose telephone number is (703) 308-5465. The examiner can normally be reached on Monday-Friday from 8:00 AM-5:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon, can be reached on (703) 305-9701. The fax phone number for this group is (703) 305-9564(65).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

  
Stephen Hong

Patent Examiner

February 2, 1995

  
MARK K. ZIMMERMAN  
PRIMARY EXAMINER  
GROUP 2300